

ELPARTS



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airclean

AirClean

Professional A/C disinfection



Passt immer!

HERTH+BUSS





AirClean – Professional A/C disinfection

Completely non-hazardous, highly effective and purely mineral

We have substantially expanded our portfolio of A/C system maintenance products: our AirClean system (spray gun and A/C system cleaner) available from the Elparts range disinfects the vehicle interior and its A/C system with a minimum of effort, reducing germs, fungi, viruses and bacteria in the process. AirClean is suitable for all vehicles – from passenger cars to commercial vehicles, motor homes, construction vehicles, tractors, agricultural machinery and refrigerated vehicles. It is also ideal for vehicles that are subject to frequent changes of user, as is the case for fleet management, vehicle rentals and passenger transport (taxis, buses and trains). There are many scenarios where using AirClean makes perfect sense, especially in workshops: before selling a vehicle, after buying a used car, for purging the A/C system of pollen and spores and as an effective measure against mould. What's more, we give workshops the opportunity to perform vehicle disinfection after repairing the A/C system – without significant deployment of personnel and without harming the environment. This is an interesting added benefit for the customer.

What is AirClean and what are its advantages?

AnoKath forms the basis of the AirClean cleaner. It is a powerful oxidising agent consisting of an aqueous solution with a low sodium chloride content and prepared by means of a special electroly-

sis process. The special AirClean cold atomiser is able to generate floating mist from a liquid in conjunction with a compressor. The disinfection using AnoKath is based on mineral substances. The benefits are obvious: only low material costs are incurred and the time required to perform a disinfection like this is minimal. There is no need to wait after using AirClean: you can continue working inside the vehicle immediately. In other words, there is no danger of contaminating workshop staff members.

How does AirClean work?

The disinfectant can be fed into the car from outside, i.e. through the A/C system's air intake, or from within by setting the device up in the passenger compartment. In addition, the spray gun can be suspended from the inside of the window pane during the process using a handle provided for this purpose. The cold mist is extremely light and floats for a long time. This means that it even gets behind all panels and reliably kills germs, spores, bacteria and viruses in doing so. When the vehicle's air circulation system is running, the active substance is conveyed throughout the vehicle interior and into the A/C system, which is also disinfected in the process. The user is able to determine the path that the mist should take by directing the pistol's outlet and by opening and closing the intake ducts and/or ventilation louvres.

The problem: Mould alert

Why it is necessary to regularly disinfect the A/C system

When moisture in the air condenses

One property of cold objects is that moisture from the ambient air condenses on them. In vehicle A/C systems, this effect is further amplified by the fact that a great deal of air flows through the evaporator. This results in a significant formation of condensation that remains on the evaporator. This becomes very clearly visible in the shape of little puddles that form under the car in warm temperatures when the A/C system is running.

A breeding ground for mould, fungi and bacteria

The whole thing becomes a problem when a vehicle is parked and the moisture lingers in the A/C box for a prolonged period. As we all know, warm and moist environments are the ideal breeding ground

for mould, fungi and bacteria. These multiply and proliferate over the evaporator and into the air ducts. As a consequence, they are transported into the vehicle interior with the air flow and inhaled by the vehicle occupants. For one thing, the infestation causes unpleasant odours, while for another, it can even be dangerous for allergy sufferers and asthmatics.

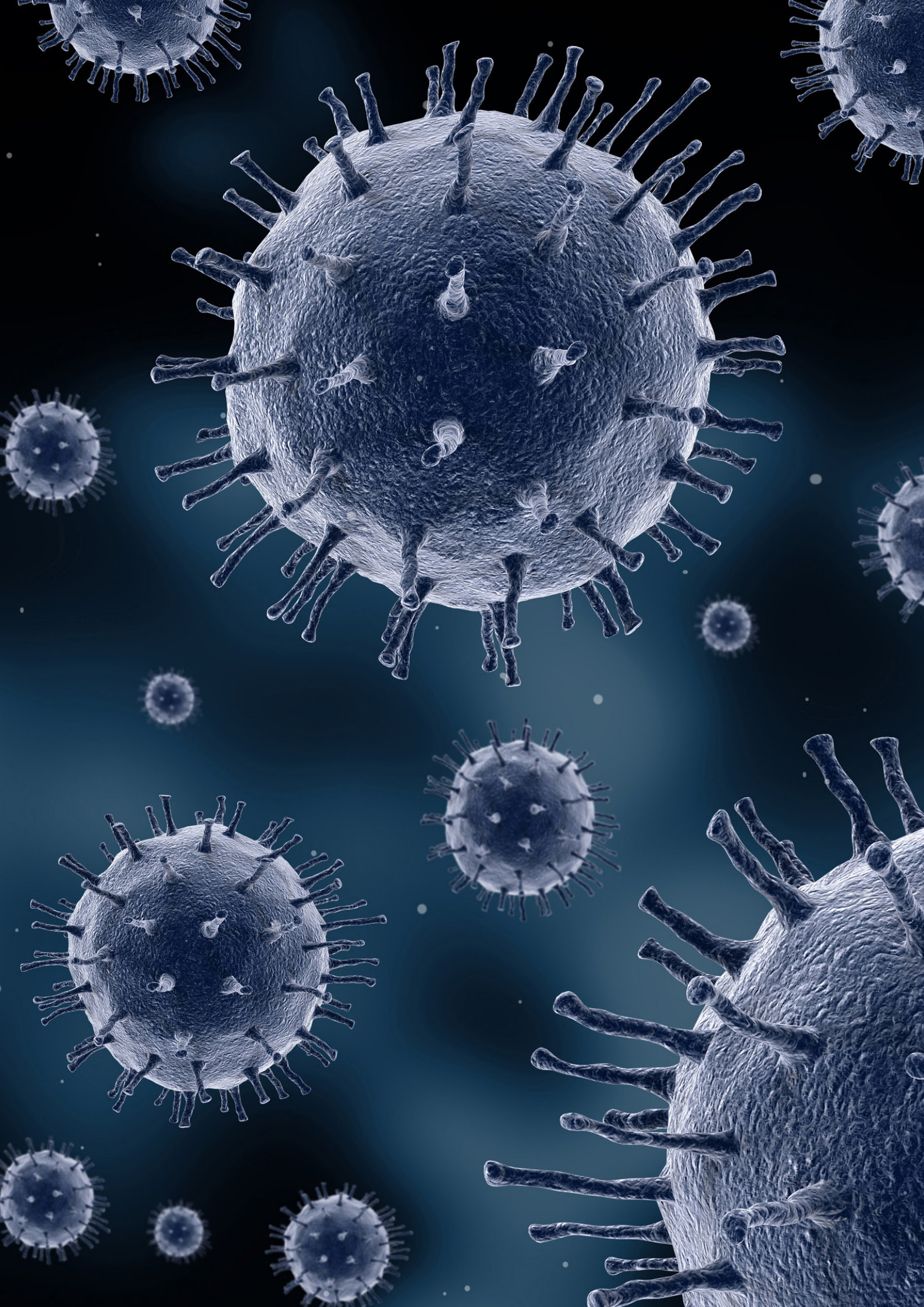
Conclusion

Regular maintenance and cleaning of the A/C system are therefore essential. Alongside replacing the cabin filter, the A/C system and the interior should also always be disinfected.

Types of A/C system disinfection

Four different types of disinfection have become established in practice. These can be categorised as follows:

Ozone disinfection	Spray disinfection	Hot atomisation (thermal atomisation)	Cold atomisation (aerosol atomisation)
Ozone is generated from the air using an ozone generator. Ozone is a highly reactive form of oxygen. It spreads throughout the space and eliminates all micro-organisms.	The agent is generally sprayed from a bottle onto the surface to be disinfected.	With this process, a chemical solution is vaporised in a device similar to a fog machine and then ejected into the ambient air through a nozzle.	An active agent is very finely atomised using a special nozzle. The fine mist reaches all areas and the agent takes effect in the full space.



Principle of cold atomisation (aerosol disinfection)

AirClean – Professional disinfection!

AnoKath is a powerful oxidising agent made from water and sodium chloride. The agent is used to disinfect vehicle A/C systems or the vehicles themselves with the help of the special AirClean cold nebulisers. It reliably reduces germs, viruses and bacteria. The disinfection process using AnoKath is based on minerals.

Article number: 95923008



In the cold atomisation process, an active agent is very finely atomised using a special nozzle. The fine mist reaches the entire interior and the ventilation shafts and unfolds its effect throughout the full space. This not only makes it suitable for disinfecting all surfaces, but also for disinfecting the ambient air. A distinction must be made between two types of aerosol generation for the cold atomisation process.

- Aerosol generation using ultrasound: here, liquid is atomised to form a fine mist using a membrane.
- Aerosol generation using compressed air: here, liquid is atomised to form a fine mist using a spray pistol.

The AirClean system implements the principle of aerosol generation using compressed air.

How does AirClean work?

The solution is conveyed into the vehicle interior through the vehicle window using a compressed-air hose. The cold mist floats in the air for a while before slowly moving downwards and reliably killing off odour particles, germs and spores. At the same time, the ventilation system is integrated into the process and disperses the active substance throughout the vehicle interior and into the A/C system, which is also disinfected. The direction that the mist should travel in can be adjusted as required.



With AirClean, we are expanding our portfolio of A/C system maintenance products. In addition to leak detection, AirClean allows us to offer the option of disinfecting the vehicle and its A/C system without a great deal of effort and without harming the environment. AirClean is suitable for all vehicles, cars, vans, HGVs, mobile homes etc.

Article number: 95921003



**AirClean
Spray pistol**

Fill quantity up to: 1 l
with hose
Compressed air connections: 1
For article no.: 95923008

95921003



**AirClean
A/C system cleaner**

Contents: 1000 ml
Operating temperature 20-25 °C
No SVHC substances present!
For article no.: 95921003

95923008

Practical example

Ten steps for successful vehicle disinfection

Before starting with the vehicle disinfection, you should first clean the vehicle thoroughly as dirt cannot be eliminated by the disinfection process. Only by doing so will you achieve satisfactory results!



00:00



1. Position the vehicle in a cool, well ventilated location. It is important to always keep an eye on the temperature range during use! If it is too hot, for example, an insufficient quantity of mist will be able to form in the vehicle.

2. Remove the air filter, pollen filter, etc., and dispose of them. Tip: the location of the filters is to be found through the RMI (e.g. InData or InData Pro from Herth+Buss, article number 95990501, -502)



3. Fill your spray pistol with the disinfectant. The required quantity varies depending on the vehicle size and the strength of the odour.

4. Connect the device to an oil-free compressor. The compressor must feature adequate continuous operating ability with an effective supply quantity of >100 l/m and a set pressure of 3-6 bar.



04:00



5. Open the bonnet and remove the cabin filter. Clean the pollen filter box if required and disinfect it. Set the ventilation system to level 1 and spray the disinfectant into the interior of the vehicle through the air intake opening of the HVAC system. Feed the agent in until the vehicle interior has become visibly filled with mist. Leave the mist to take effect for approx. 1 minute.

6. Next comes the disinfection of the interior (seats, roof liner, footwell), the A/C system's air intake, the dashboard and the side sections. To do so, position the spray pistol in the vehicle interior. Set the blower to the medium setting at approx. 20 °C, open all air nozzles and set the ventilation to circulation mode. It's even more effective to switch through all of the settings. Doing so will feed the aerosol through all flaps and air ducts, allowing it to reach every last corner. Set up an ex-



ternal power supply for the vehicle electrical system or leave the engine running. Close the doors and leave the door that the ventilation supply hose is fed through propped open in order to prevent too much of the mist from escaping. Open the compressed air supply and let the disinfectant flow in until an obvious saturation/formation of mist is visible inside the vehicle.

7. Now turn the device off and remove the spray pistol. Close the door and let the ventilation run for a further 2-5 minutes.



10:00



8. Next, open all doors and the boot in order to briefly air out the vehicle.

9. You may now install new filters in the vehicle.



15:00



10. In just 15 minutes, you have successfully disinfected the A/C system and the vehicle!

All the benefits at a glance

Safe, non-hazardous vehicle disinfection with AirClean

With AirClean, Herth+Buss is able to offer a highly effective alternative method of vehicle disinfection which is completely non-hazardous to people and the environment, operates on a purely mineral basis and is currently the only system of its kind. The most significant advantages and properties of AirClean can be found in the following overview:

■ AirClean works on a purely mineral basis

The active substance does not contain any toxic substances or aggressive chemicals and is 100% biodegradable. Users are not exposed to contamination while working, as the agent is perfectly non-hazardous for people, health and the environment.

■ AirClean is highly effective

The active substance is proven to be highly effective and reliably eliminates mould, viruses and bacteria.

■ AirClean is quick and easy to use

A large quantity of mist can be generated in a very short time using the spray pistol. This mist is so fine that it gets into every recess in the vehicle. This enables the entire interior of the vehicle to be filled with aerosol in addition to the A/C system. The time required is around five minutes.

■ AirClean is highly flexible in operation

The user is not tied to a certain position thanks to the hand-held device. What's more, various surfaces can be treated more gently or intensively as required. Conventional electric atomisers are unable to offer this kind of flexibility.

■ AirClean is maintenance-free

The device does not require any kind of maintenance. Simply rinse it out with tap water after use and that's all.

■ AirClean guarantees allergy sufferers protection and hygiene

AirClean is not only suitable for disinfecting A/C systems. It can be used anywhere that safety and hygiene are of paramount importance. Allergy sufferers in particular stand to benefit from its effects.



Do you have any more questions?

Our FAQs

We have compiled answers to some FAQs for you below.

How long can the disinfectant be kept for?

When unopened and when adhering to the prescribed storage conditions, the product can be kept for a maximum of 12 months. Refer to the information on the label. When opened and when adhering to the prescribed storage conditions, the product can be kept for a maximum of 6 months.

Can any type of compressor be used?

Yes, in principle. However, it is recommended to use an oil-free compressor. When using conventional compressors with lubrication, a reliable oil separator and filter must be used. The following must be guaranteed:

- Clean compressed air with no rust residues, condensate or oil content. Even the smallest quantities of oil, rust or other impurities may impair the effectiveness of the disinfectant.
- Effective supply quantity >100 l/min
- Set pressure 3-6 bar
- Compressor must be adequately able to operate continuously

Where should vehicle disinfection be carried out?

Disinfection should be carried out in well-ventilated internal areas

or outside (not in the rain) at an ambient temperature of 20-25 °C. Direct sunlight and an internal vehicle temperature of over 25 °C are to be avoided.

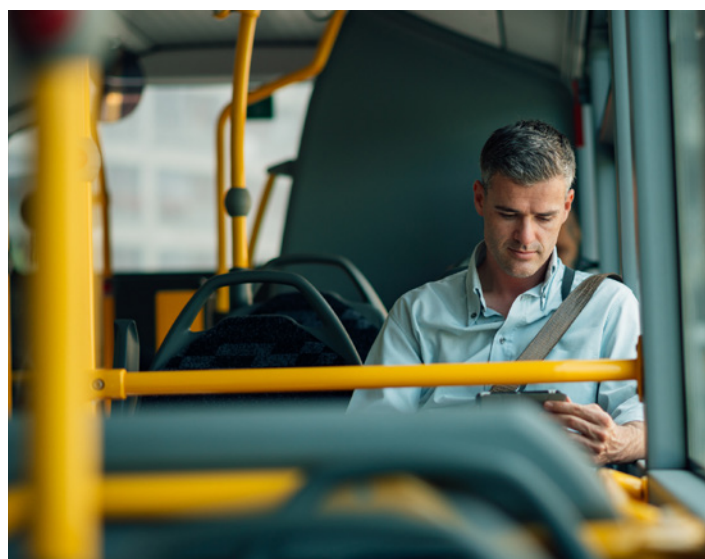
What must I pay attention to when disinfecting the A/C system or the vehicle?

The vehicle's cabin filter should be removed prior to disinfection and be replaced by a new one after disinfection has been carried out. The mist should also be fed directly into the air intake ducts in order to ensure adequate distribution of the medium in the A/C system. The vehicle manufacturer's instructions must be observed. In general, the vehicle must always be thoroughly cleaned before disinfection.

How much air-conditioning cleaner is required for each application and each type of vehicle?

The consumption rates for air-conditioning cleaner are approximately as follows:

- Small car: application time 5 minutes; consumption 70 ml
- Mid-range car: application time 10 minutes; consumption 100 ml
- Van/SUV/minibus: application time 12 minutes; consumption 120 ml



Also interesting!

Fresh air with cabin filters from Herth+Buss

Impressive filter variety.

Our Jakoparts range includes an extensive selection of cabin filters for Asian car models.

Replacing the cabin filter regularly protects against pollen, harmful substances, fungi and bacteria. After all, the job of the cabin filter is to remove harmful substances from the ambient air and to provide purified air in the vehicle interior. Cabin filters therefore not only increase the comfort of the vehicle occupants, but also help keep allergy sufferers safe and healthy while driving. It is particularly important for allergy sufferers that the supply of fresh air in the vehicle is guaranteed.

Cabin filters should be replaced once a year, as the residue they collect is not only unhygienic, but also significantly reduces the performance of the filter. In addition to the health risks, this also reduces the efficiency of the A/C system. We can offer the right cabin filter for each vehicle. While conventional filters filter pollen, dust, soot

and wear particles larger than three micrometres from the air flow, activated carbon filters also protect against nasty smells, exhaust gas and ozone.

In addition to cabin filters, our Jakoparts range also includes a wide selection of fuel, oil and air filters for Asian car models. This means that we can guarantee extensive vehicle coverage and the accuracy of fit and allocation quality that set us apart from our competitors.

See the wide variety of our range of filters for yourself at herthundbuss.com/online-katalog

Cabin filters

Article numbers:

J134*

SelectH₂ – Leak detection in A/C and refrigeration plant

Our SelectH₂ has been successfully established in the market place. With this device's innovative technology, we offer automotive workshops a method of searching for defects in passenger car A/C systems that saves time and money and, above all, protects the environment.

Convincing advantages over contrast agent and UV light

First and foremost, the use of forming gas achieves considerable time savings compared with conventional, time-consuming troubleshooting with contrast agents and UV light. Being able to vary the pressure on the device also enables the discovery of other hard-to-detect vibration leaks. And this method also provides the answer to a well-known problem when using contrast agents: namely, if too much contrast agent is poured into the refrigerant circuit, the valves can stick – not just in the A/C unit itself, but also in the A/C service unit. This is prevented by the use of SelectH₂.

Forming gas conforms to the EU Climate Protection Regulation.

The EU Climate Protection Regulation of 2008 places workshops under the legal obligation to eliminate leaks in the system before they may be refilled with refrigerant. The location of leaks using forming gas, which consists of 95% nitrogen and 5% hydrogen, is a low-cost, efficient alternative. What's more, this method is extremely environmentally friendly, and has a major advantage in that hydrogen, as the smallest atom, can penetrate even the tiniest leakage points at higher concentrations than the refrigerant R134a itself.

Simple and unique method of operation

The way that the SelectH₂ works is unique in the world for a mobile device, as well as being phenomenally easy and efficient. The evacuated A/C plant is filled with test gas so that the non-flammable and non-toxic forming gas can be distributed evenly throughout the refrigeration system of the A/C plant. Leak detection can now commence. If a leak exists, the extremely volatile hydrogen will escape at that point. The device reacts to a found leak by means of one acoustic and two optical signals, and shows the measured quantity of hydrogen on the display in ppm.

The compact SelectH₂ is equipped with two gas sensors and a suction pump which act like an artificial nose and respond only to hydrogen. This prevents indications of petrol and oil vapours during the leak detection. This is the most important difference as conventional devices respond to the refrigerant R134a. Another significant benefit is that, due to its chemical properties, the hydrogen is diffused through the smallest of hairline cracks to ensure quick, reliable detection of a leak. With conventional equipment, it is almost impossible to locate very small leaks, for instance hairline cracks.

After repairing the leak, it is recommended that another leak test be carried out using forming gas followed by a function check.

SelectH₂

article number:

95980002



SelectH₂ – All the benefits at a glance

Our selective gas detectors SelectH₂ and SelectH₂ mini offer you a time-saving and above all environmentally friendly option for very quickly pinpointing even the smallest leaks in A/C plants.

- Defective evaporators can be reliably diagnosed by removing the regulator resistor, for example. You can therefore avoid the unnecessary and time-consuming removal of the dashboard caused by false diagnosis.
- False diagnoses caused by oil and petrol vapours can be ruled out as the sensors only selectively respond to the hydrogen contained in the forming gas.
- It is possible to test all closed systems if the forming gas can be introduced to them (e.g. radiator, pneumatic brake systems, etc.).
- The devices are suitable for vehicle dealers or appraisers to use for assessing vehicles which have been involved in accidents. A defective A/C plant can have an impact on the residual value of a vehicle.
- The A/C plants of passenger cars, commercial vehicles and buses alike can all be tested.
- Suitable for both A/C plants with R134a and those with HFO-1234yf.
- Forming gas is cheap to procure. In addition, it is environmentally friendly, non-toxic and also very safe due to being non-flammable.
- The products SelectH₂ and SelectH₂ mini are made in Germany.
- The function of these devices is unique amongst mobile devices worldwide and exclusively available from Herth+Buss.
- High sensitivity and susceptibility of the sensor system, which can even detect concentrations in the ppm range.

Good to know

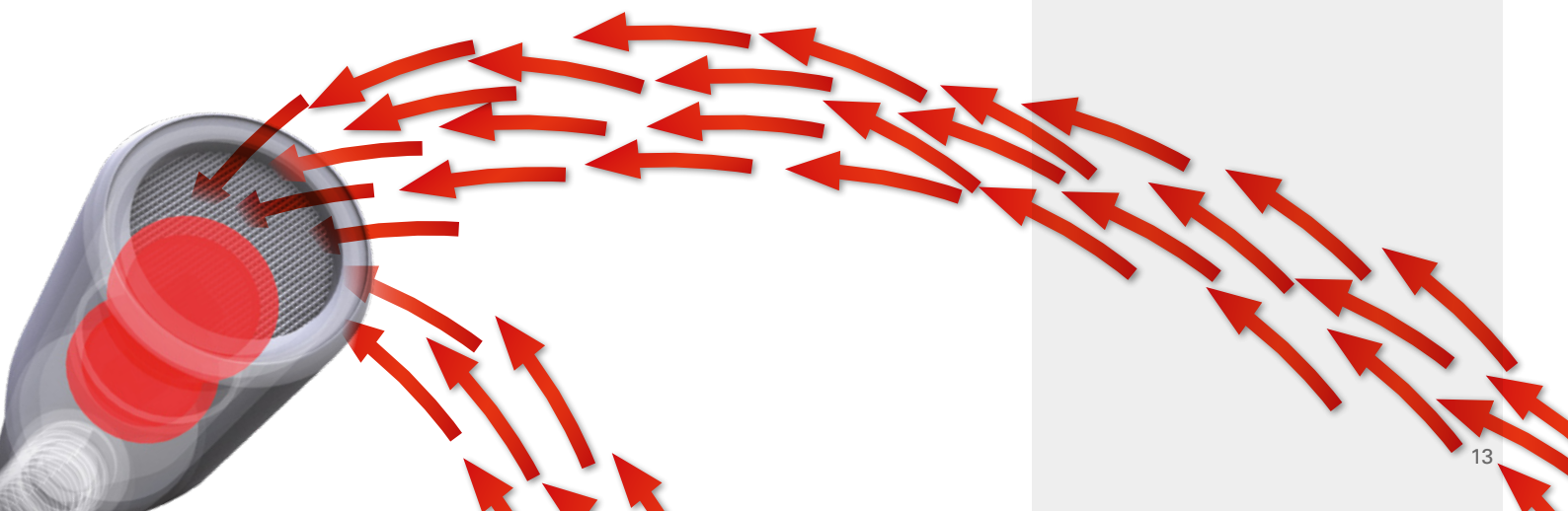
Invisible hazard

Investigations have shown that the GWP (Global Warming Potential) value of R-134a is around 1,300 times higher than that of CO₂. According to experts' estimates, around 820 tons of the refrigerant R134a are released into the atmosphere each year. This equates to a quantity of one million tons of CO₂, although losses caused by accidents and repair work cannot be taken into account for the purposes of the calculation. Since August 2008, the new Chemical Climate Protection Ordinance has therefore been in force, imposing on workshops a legal obligation to eliminate any leaks in a system before it can be refilled with refrigerant.

As of 1 January 2017, R-134a will be forbidden in all new cars across Europe. This means that R-134a will gradually need to be replaced by new refrigerants that minimise the greenhouse effect.

Refrigerant HFO-1234yf

Since as long ago as January 2011, the refrigerant HFO-1234yf has been used in passenger car A/C plants with new type approvals. This means that the proportion of vehicles with A/C plants containing this refrigerant is constantly increasing. Workshops will need to get used to the fact that they have to handle this new refrigerant in the future.



Practical example

Leak detection with SelectH₂

Evacuation



Evacuate the A/C plant using a suitable A/C service station.

Filling with forming gas 95/5



Now fill the high-pressure side of the A/C plant. Using the leak detection set extension kit, the high- and low-pressure sides can be filled simultaneously.

Heating up the device



The heat-up phase is signalled by the word „HEAt“ and lasts approx. 50 seconds.

Leak detection



Feed the gas detector along the top of the hose connections and components at a steady speed. You can read out the respective hydrogen concentration on the display. Rising ppm values indicate a leak.

Locating the leak



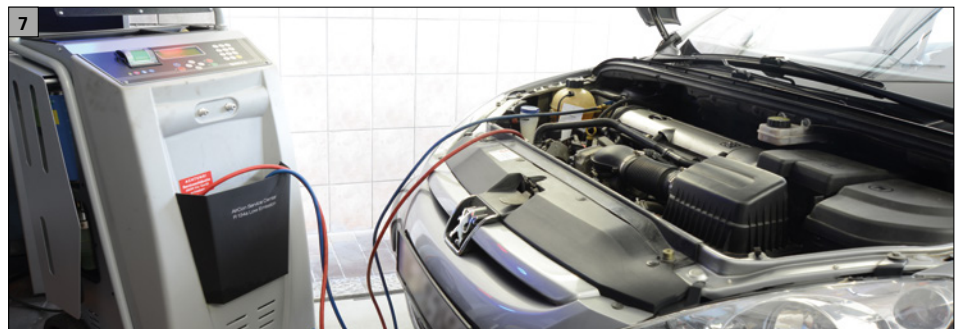
Leaks are also indicated by means of acoustic and visual signals.

Repair and inspection



After repairing the leak, it is recommended that another inspection be carried out using forming gas, followed by a function check.

Filling with refrigerant and testing leak-tightness



Then fill the A/C plant with the appropriate refrigerant. Finally, perform a function check.

A/C servicing

Experience leak detection live!

Leak detection and disinfection of A/C systems

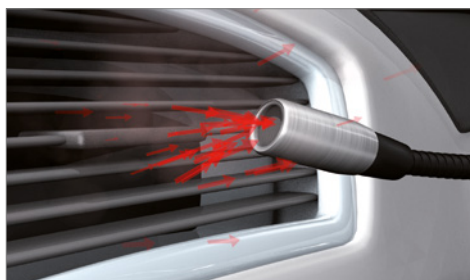
Our selective gas detectors SelectH2 and Select H2 mini offer a time-saving and above all very environmentally friendly alternative for quickly tracking down leaks in A/C plants. In the training course, our workshop field service uses a tester and test model to show how even the most minor leak can be found in no time at all. And so you can enjoy a live demonstration of all the advantages.

Information:

Target group:	Workshops
Duration:	1.5 hours
Training location:	customer premises

Seminar content:

- function of the selective gas detectors in theory and practice
- current state of European Union directives, standards and norms
- special solution for vehicle electrics
- example applications
- the Climate Protection Ordinance and its implementation
- components and their functions
- forming gas and its advantages
- disinfecting the A/C system with AirClean
- function of the AirClean products
- the benefits of AirClean



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